A strategic roadmap towards Touchless Interactions during Image-guided Therapy

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2023 · H1

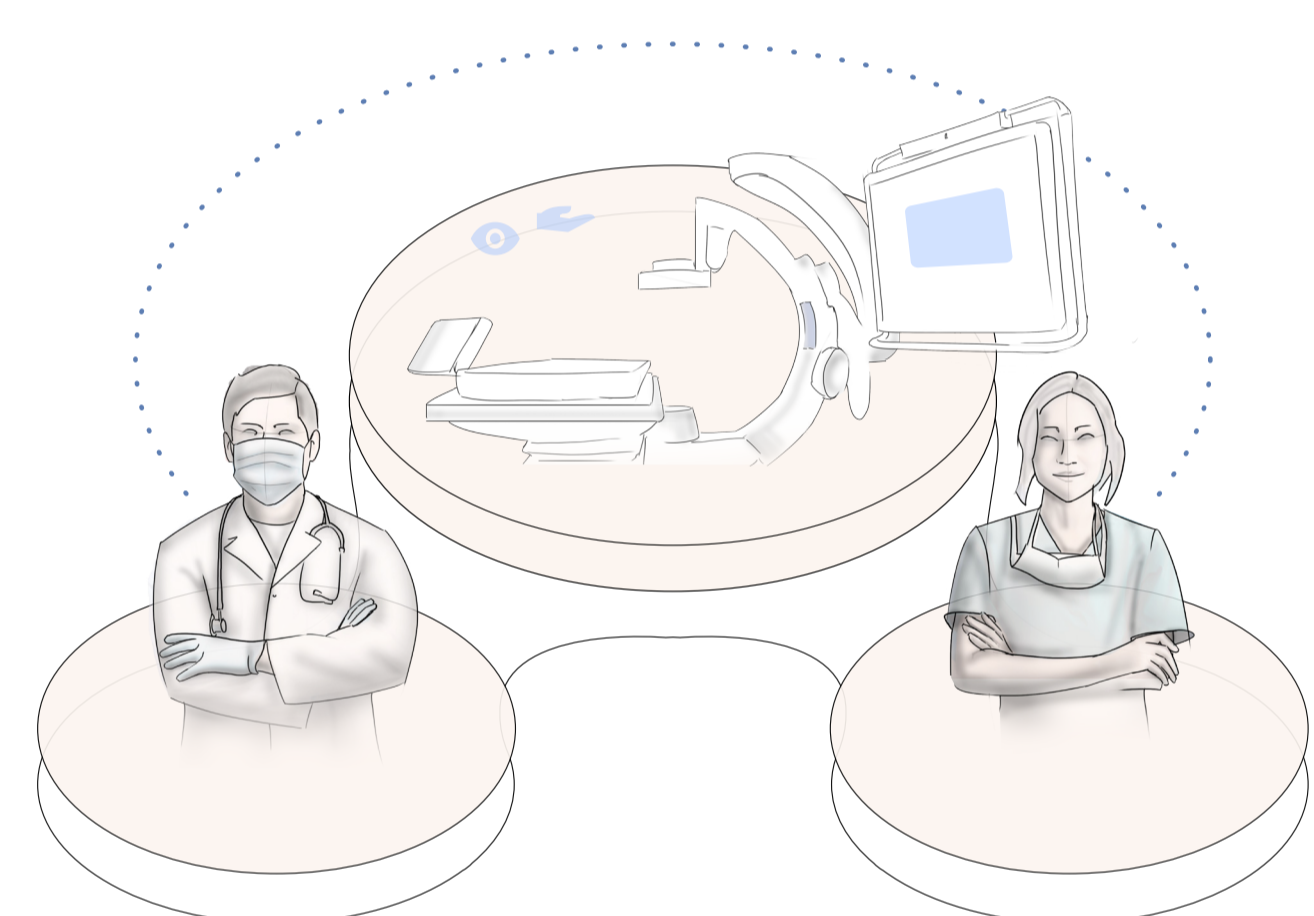**2026** · H2

2030 · H3

2035 · FV

Horizon elaboration

Facilitation of technological improvements
Reinforcing the connection with technology

This horizon is about reinforcing the bridge between human and technology. By improving the infrastructure and communication, inefficiencies can be lowered and teamwork between stakeholders can be improved. This results in an optimized workflow in which less bottlenecks will take place.
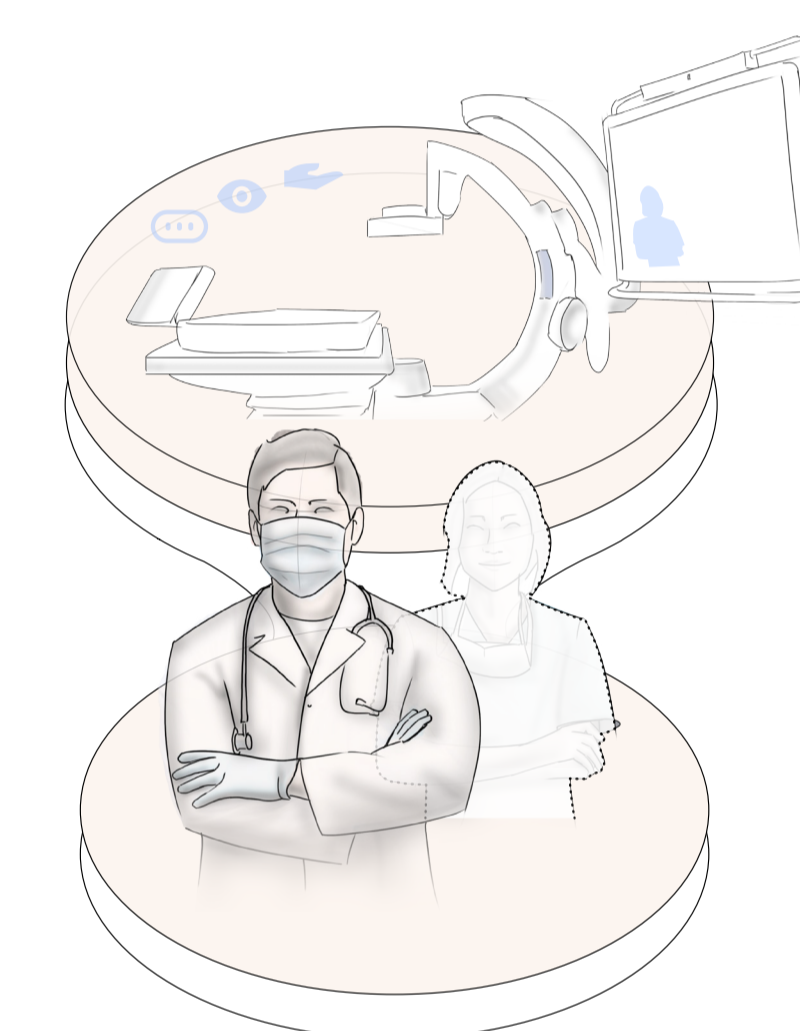
Optimization of communication
Aligning stakeholders and improving workflow through technology

In the second horizon a situation is described in which the connection between human and technology has got even stronger. Therefore, it allows for optimized alignment of stakeholders in the context. Most inefficiencies are prevented and everyone in the cathlab actively participates when needed in a more optimal workflow. Additionally, some of the indirect HCI bottlenecks are minimized through new innovations and accurate alignment of human and technology.
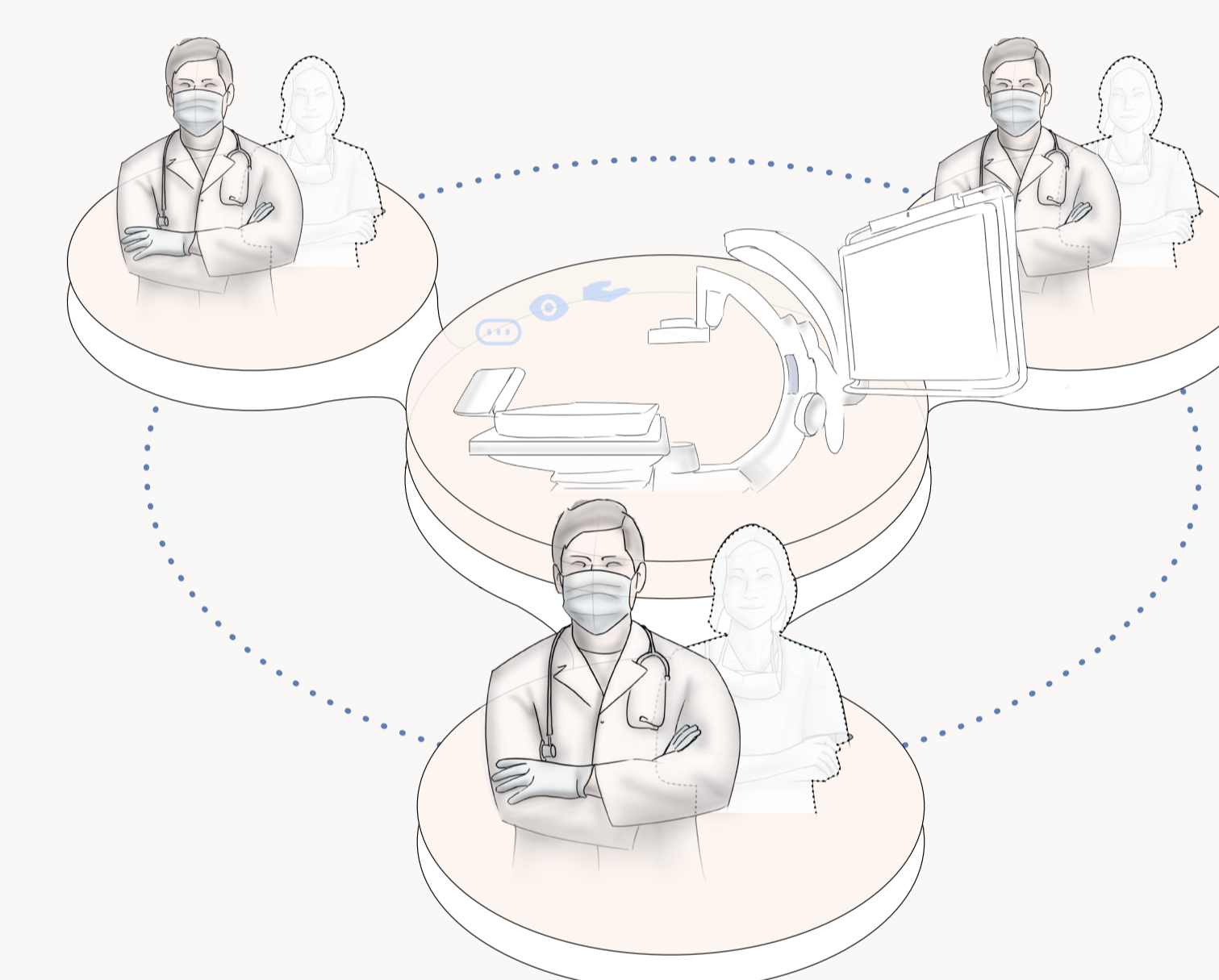
Towards an autonomous cathlab
Optimization of workflow through merging innovations with teamwork

In the last horizon the team's connection between human and technology is so strong that the doctor feels in total control without the loss of any time. Several innovative ideas merge together into an optimized workflow that excludes the need for assistants. Almost all indirect HCI are prevented with the implementation of the concepts mentioned.
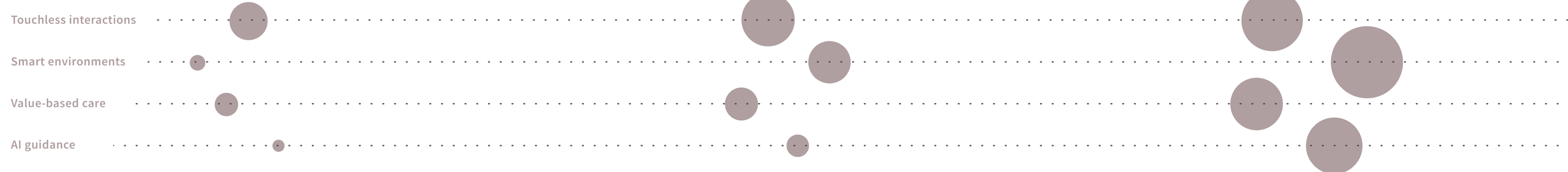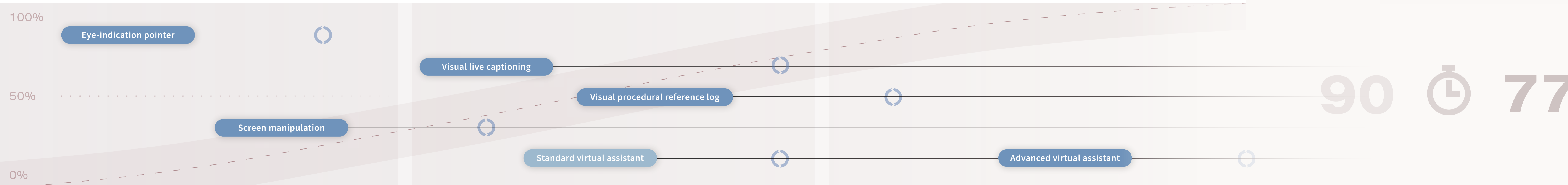
Future vision

"The role of IGT develops towards solving patient pathologies by an aligned medical team, together with significant technological support of multiple smart systems. An optimized, integrated and efficient workflow that is supported by touchless interaction solutions will contribute to value-based care that is provided within the context of IGT."

Healthcare landscape

- Touchless interactions
- Smart environments
- Value-based care
- AI guidance

Design implications

- 100%
- 50%
- 0%

- Eye-indication pointer
- Visual live captioning
- Visual procedural reference log
- Screen manipulation
- Standard virtual assistant
- Advanced virtual assistant

90 ⏱ 77

Estimated value

Horizon specific executive performance value	28	
Cumulative executive performance value	28	

Horizon specific executive performance value	33	
Cumulative executive performance value	61	

Horizon specific executive performance value	18	
Cumulative executive performance value	79	

Estimated improvement target
After implementing all considered concepts
Total executive performance value **79**

35% *At the end of this horizon, it is assumed that **35% of the improvement target** can be accomplished, resulting in an improved workflow efficiency with a decrease in procedure duration of **4-5 minutes**.*

75% *At the end of this horizon, it is assumed that **75% of the improvement target** can be accomplished, resulting in an improved workflow efficiency with an additional decrease in procedure duration of **5-6 minutes**.*
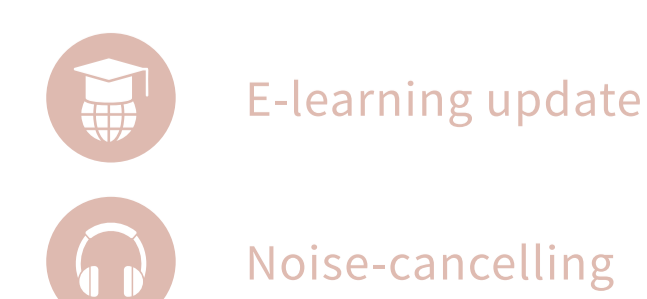
100% *At the end of this horizon, it is assumed that **100% of the improvement target** can be accomplished, resulting in an improved workflow efficiency with an additional decrease in procedure duration of **3-4 minutes**.*

The standard procedure time is aimed to **decrease to 85% of the original procedure time**. Considering an average duration of a PCI procedure being 90 minutes, this results in an average procedure duration of 77 minutes.

Service porpositions

- E-learning update
- Training labs
- Noise-cancelling

- E-learning update
- Training lab update
- Touchless UI workshop
- AR/VR experience centre

- E-learning update
- Training lab update